

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of the claims in the application:

Claim 1. (Currently Amended) A distortion compensation apparatus for compensating for a distortion component generated in a device, comprising:

first envelope detection means for detecting an input envelope voltage of an input signal supplied to the device;

second envelope detection means for detecting an output envelope voltage of an output signal of the device;

comparison means for comparing the input envelope voltage detected by the first envelope detection means with the output envelope voltage detected by the second envelope detection means;

comparison result correction means for correcting a relationship corresponding to a result of the comparison made by the comparison means indicating which of the envelope voltages is larger;

amplitude control signal generation means for generating an amplitude control signal for controlling an amplitude of the input signal based on a correction output of the comparison result correction means; and

amplitude control means for controlling a gain of the amplitude of the input signal based on the amplitude control

signal generated by the amplitude control signal generation means-, wherein the comparison result correction means latches the comparison result of the comparison means, and corrects and outputs one of a digital +1 bit and a digital -1 bit based on a latch value of the result of latching.

Claim 2. (Currently Amended) The apparatus according to claim 1, wherein the amplitude control signal generation means includes amplitude correction data output means for outputting data for amplitude correction in correspondence with the input envelope voltage detected by the first envelope detection means, and for updating the data for amplitude correction based on the correction output of the comparison result correction means.

Claim 3. (Previously Presented) The apparatus according to claim 2, wherein the amplitude correction data output means is a writable storage medium that stores the data for amplitude correction.

Claim 4. (Previously Presented) The apparatus according to claim 3, wherein the amplitude correction data output means comprises two writable storage media.

Claim 5. (Previously Presented) The apparatus according to claim 4, wherein the two writable storage media alternately perform reading and updating of the data for amplitude

correction.

Claim 6. (Cancelled)

Claim 7. (Currently Amended) A distortion compensation apparatus for compensating for a distortion component generated in a device, comprising:

first envelope detection means for detecting an input envelope voltage of an input signal supplied to the device;

second envelope detection means for detecting an output envelope voltage of an output signal of the device;

calculation means for calculating a difference between the input envelope voltage detected by the first envelope detection means and the output envelope voltage detected by the second envelope detection means;

comparison means for comparing the difference calculated by the calculation means with a predetermined reference value;

comparison result correction means for correcting a relationship corresponding to a result of the comparison made by the comparison means indicating which of the difference and the reference value is larger;

amplitude control signal generation means for generating an amplitude control signal for controlling a gain of an amplitude of the input signal based on a correction output of the comparison result correction means; and

amplitude control means for controlling the gain of the amplitude of the input signal based on the amplitude control

signal generated by the amplitude control signal generation means-, wherein the comparison result correction means latches the comparison result of the comparison means, and corrects and outputs one of a digital +1 bit and a digital -1 bit based on a latch value of the result of latching.

Claim 8. (Previously Presented) The apparatus according to claim 7, wherein the amplitude control signal generation means includes amplitude correction data output means for outputting data for amplitude correction in correspondence with the input envelope voltage detected by the first envelope detection means, and for updating data for amplitude correction based on the correction output of the comparison result correction means.

Claim 9. (Previously Presented) The apparatus according to claim 8, wherein the amplitude correction data output means is a writable storage medium that stores the data for amplitude correction.

Claim 10. (Previously Presented) The apparatus according to claim 9, wherein the amplitude correction data output means comprises two writable storage media.

Claim 11. (Previously Presented) The apparatus according to claim 10, wherein the two writable storage media alternately perform reading and updating of the data for

amplitude correction.

Claim 12. (Cancelled)

Claim 13. (Currently Amended) The apparatus according to claim 7, ~~further comprising two~~ wherein the comparison means comprises two comparators for comparing the difference calculated by the calculation means with predetermined reference values to obtain two comparison results.

Claim 14. (Currently Amended) The apparatus according to claim 13, wherein the comparison result correction means corrects a relationship corresponding to the two comparison results indicating which of the difference and the reference values are is larger.

Claim 15. (Previously Presented) The apparatus according to claim 1, further comprising:

phase control signal generation means for generating a phase control signal for controlling a phase of the input signal in correspondence with the input envelope voltage detected by the first envelope detection means; and

phase control means for controlling the phase of the input signal based on the phase control signal generated by the phase control signal generation means.

Claim 16. (Previously Presented) The apparatus according

to claim 15, wherein the amplitude control signal generation means includes amplitude correction data output means for outputting data for amplitude correction in correspondence with the input envelope voltage detected by the first envelope detection means, and for updating the data for amplitude correction based on the correction output of the comparison result correction means.

Claim 17. (Previously Presented) The apparatus according to claim 16, wherein the amplitude correction data output means is a writable storage medium that stores the data for amplitude correction.

Claim 18. (Currently Amended) The apparatus according to claim 17, wherein the amplitude correction data output means comprises two writable storage media.

Claim 19. (Previously Presented) The apparatus according to claim 18, wherein the two writable storage media alternately perform reading and updating of the data for amplitude correction.

Claim 20. (Currently Amended) The A distortion compensation apparatus according to claim 15, for compensating for a distortion component generated in a device, comprising:  
first envelope detection means for detecting an input envelope voltage of an input signal supplied to the device;

second envelope detection means for detecting an output envelope voltage of an output signal of the device;

comparison means for comparing the input envelope voltage detected by the first envelope detection means with the output envelope voltage detected by the second envelope detection means;

comparison result correction means for correcting a relationship corresponding to a result of the comparison made by the comparison means indicating which of the envelope voltages is larger;

amplitude control signal generation means for generating an amplitude control signal for controlling an amplitude of the input signal based on a correction output of the comparison result correction means; and

amplitude control means for controlling a gain of the amplitude of the input signal based on the amplitude control signal generated by the amplitude control signal generation means.

wherein the comparison result correction means latches the comparison result of the comparison means, and corrects and outputs one of a +1 bit and a -1 bit based on a latch value of the result;

phase control signal generation means for generating a phase control signal for controlling a phase of the input signal in correspondence with the input envelope voltage detected by the first envelope detection means; and

phase control means for controlling the phase of the

input signal based on the phase control signal generated by the phase control signal generation means,

wherein the comparison result correction means latches the comparison result of the comparison means, and corrects and outputs one of a digital +1 bit and a digital -1 bit based on a latch value of the result of latching.

Claim 21. (Previously Presented) The apparatus according to claim 7, further comprising:

phase control signal generation means for generating a phase control signal for controlling a phase of the input signal in correspondence with the input envelope voltage detected by the first envelope detection means; and

phase control means for controlling the phase of the input signal based on the phase control signal generated by the phase control signal generation means.

Claim 22. (Previously Presented) The apparatus according to claim 13, further comprising:

phase control signal generation means for generating a phase control signal for controlling a phase of the input signal in correspondence with the input envelope voltage detected by the first envelope detection means; and

phase control means for controlling the phase of the input signal based on the phase control signal generated by the phase control signal generation means.



Claim 23. (Currently Amended) A distortion compensation apparatus for compensating for a distortion component generated in a device, comprising:

first envelope detection means for detecting an input envelope voltage of an input signal supplied to the device;

phase control signal generation means for generating a phase control signal for controlling a phase of the input signal in correspondence with the input envelope voltage detected by the first envelope detection means;

phase control means for controlling the phase of the input signal based on the phase control signal generated by the phase control signal generation means;

second envelope detection means for detecting an output envelope voltage of an output signal of the device;

phase difference detection means for detecting a phase difference between the input envelope voltage detected by the first envelope detection means and the output envelope voltage detected by the second envelope detection means; and

addition means for adding the phase difference detected by the phase difference detection means to the phase control signal generated by the phase control signal generation means, and for supplying an addition result to the phase control means;

comparison means for comparing the input envelope voltage detected by the first envelope detection means with the output envelope voltage detected by the second envelope detection means;

comparison result correction means for correcting a relationship corresponding to a result of the comparison made by the comparison means indicating which of the envelope voltages is larger;

amplitude control signal generation means for generating an amplitude control signal for controlling an amplitude of the input signal based on a correction output of the comparison result correction means; and

amplitude control means for controlling a gain of the amplitude of the input signal based on the amplitude control signal generated by the amplitude control signal generation means,

wherein the comparison result correction means latches the comparison result of the comparison means, and corrects and outputs one of a digital +1 bit and a digital -1 bit based on a latch value of the result of latching.

Claim 24. (Canceled)

Claim 25. (Currently Amended) The apparatus according to claim 24 23, wherein the amplitude control signal generation means includes amplitude correction data output means for outputting data for amplitude correction in correspondence with the input envelope voltage detected by the first envelope detection means, and for updating the data for amplitude correction based on the correction output of the comparison result correction means.

Claim 26. (Previously Presented) The apparatus according to claim 25, wherein the amplitude correction data output means is a writable storage medium that stores the data for amplitude correction.

Claim 27. (Previously Presented) The apparatus according to claim 26, wherein the amplitude correction data output means comprises two writable storage media.

Claim 28. (Previously Presented) The apparatus according to claim 27, wherein the two writable storage media alternately perform reading and updating of the data for amplitude correction.

Claims 29-35. (Cancelled)